American Society for Testing Materials BULLETIN

ISSUED BI MONTHLY

A Review of 1929

WITH this number of the BULLETIN we bring again to our readers a review of the activities and accomplishments of the Society during the past year. Not many have either the time or the opportunity to follow closely all the varied activities of the fifty committees of the Society and this "panoramic view" of the year's work makes it possible for everyone to keep in general touch with Society affairs.

Nineteen Twenty-nine has been a busy year, with many important research and standardization projects initiated, completed or carried on, and several significant changes in administration put into effect. What has been accomplished will serve as an inspiration to make 1930 a still bigger and better year for A.S.T.M.

January, 1930

CONGRESS JAN 23

ENGINEERS' CLUB BUILDING
1315 SPRUCE ST., PHILADELPHIA

A BIRD'S-EYE VIEW

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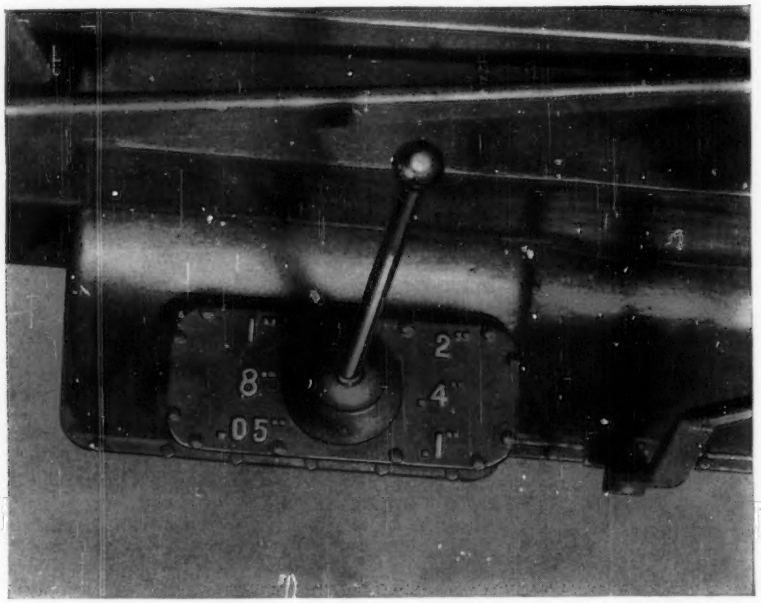

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"ONE TEST IS WORTH A THOUSAND EXPERT OPINIONS"

American Society for Testing Materials

BULLETIN

ENGINEERS' CLUB BUILDING 1315 SPRUCE STREET PHILADELPHIA, PA.

NUMBER 42 JANUARY 15, 1930

The A.S.T.M. in 1929

THE year 1929 was in many ways an eventful one for the American Society for Testing Materials and substantial progress was made in the promotion of knowledge of materials of engineering and the standardization of specifications and methods of testing, the fundamental purposes for which the Society is organized. The committees of the Society have reported a number of researches, among them being the effect of tin and arsenic in tool steel, effect of reduction from ingot to bloom on physical properties of steel forgings, heat treatment of cast iron, investigations of die-casting alloys of various composition, corrosion of iron and steel, both uncoated and galvanized, methods of testing cement, methods of making concrete flexure test specimens, effect of flat particles in gravel, effect of stone dust in crushed stone, and many others.

The technical papers and discussions at the annual meeting include many notable contributions to the knowledge of materials, which are mentioned later in their appropriate place in this review. Two Symposiums at the meeting, one on Mineral Aggregates and the other on Cast Iron, served as an excellent résumé of knowledge of these materials and pointed the way to important avenues of further study. The Edgar Marburg Lecture for the year, delivered by Dr. Saul Dushman, Assistant Director of Research, Research Laboratory, General Electric Co., Schenectady, N. Y., dealt with a subject, "Cohesion and Atomic Structure," that treats of fundamental properties of matter that will have increasing importance to the student of engineering materials.

DETROIT REGIONAL MEETING
Book-Cadillac Hotel, Detroit, Mich.
March 19, 1930

SPRING GROUP COMMITTEE MEETING
Book-Cadillac Hotel, Detroit, Mich.
March 18-21, 1930

ANNUAL MEETING
Haddon Hall, Atlantic City, N. J.
June 23-27, 1930

In its work of standardizing specifications and methods of test, considerable progress was made through the activities of the standing committees. Under the appropriate topics, as discussed later in more detail, are listed the several actions taken in respect to standards, which in all represent the acceptance of 20 new tentative standards, the formal adoption as standard of 32 tentative standards and the revision of 19 existing standards. The Society now has 390 standards and 173 tentative standards.

Two new committees were organized during the year: Committee A-10 on Iron-Chromium, Iron-Chromium-Nickel and Related Alloys and Committee B-5 on Copper and Copper Alloys, Cast and Wrought. The organization of the former committee puts the Society actively into an important new field of work. Committee B-5 takes over as a standing committee the work on copper alloys that has previously been handled by Committee B-2. In 1928 Committee B-7 on Light Metals and Alloys, Cast and Wrought, was similarly organized to take over from Committee B-2 work in the field of light metals and alloys. This reorganization, by relieving Committee B-2 of some of the many, and to some extent unrelated, topics that have accrued to it in the 20 odd years of its existence, will make for more effective organization. To more effectively administer the Society's work in this field there has been formed a coordinating committee on non-ferrous metals and alloys, consisting of representatives of the six non-ferrous metals committees in the Society which coordinates their activities, adjusts questions of scope and jurisdiction, provides for joint action where necessary and in a general way guides and directs the Society's activities in the whole non-ferrous metals field.

Committee C-4 on Clay and Cement-Concrete Pipe, by a reorganization involving personnel and sub-committee structure, is now actively at work in the development of specifications in this field. Committee D-2 on Petroleum Products and Lubricants, having substantially completed the development of standard methods of testing petroleum products and having critically studied the significance of these tests in the specifying of these products, has now begun work on the development of specifications for gasolines, motor oils and fuel oils. This is being handled through the organization of three technical committees in which the co-operation of other organizations and societies concerned with the production and use of these products has been enlisted.

In other ways the Society has prospered in 1929. Its membership is now 4365. The plan of having a class of company members at increased dues, instituted at the beginning of 1928, has worked out very satisfactorily, there being now 1178 company members. The increased income thus afforded to the Society has made it possible to extend its activities in ways that would otherwise have been beyond

our reach. It has made possible the publication of a greater volume of technical papers and committee reports, the publication of the annual Index to A.S.T.M. Standards and Tentative Standards which has taken its place as an important Society publication and has also made possible the expansion of the headquarters staff to provide the administrative assistance required to effectively carry on Society activities. The Society has been able to add substantially to its headquarters reserve and publication reserve and to increase the A.S.T.M. Research Fund by approximately $2000, the principal of this fund now comprising over $8100.

In addition to the Index to Standards and Tentative Standards mentioned above, of which the second annual number was published in 1929, there was also published for the first time an abstract of articles on fatigue of metals prepared by the Society's Research Committee on that subject. Other regular publications include the annual Year Book, the Supplement to 1927 Book of A.S.T.M. Standards, the Book of A.S.T.M. Tentative Standards and the annual Proceedings.

Some important developments in administrative affairs have taken place. A new administrative Committee E-10 on Standards has been organized, primarily for the purpose of directing broadly the standardization activities of the Society in a way similar to that in which the research activities of the Society are administered by Committee E-9 on Correlation of Research. The committee will act in standardization matters in an advisory capacity to the Executive Committee. It will consider matters of general policy concerning standardization work, including the relationship of this work with that of other bodies; it will review annually the progress of the Society's standardization work and consider the desirability of extending that work into new fields. To this committee has also been assigned an important new function, namely, that of reviewing proposed new standards that may be offered by standing committees in the interval between annual meetings of the Society. This modification of the standardization procedure will make that procedure somewhat more flexible in that standing committees may now submit reports of completed work at any time and the new Committee on Standards may act for the Society in receiving and publishing as tentative proposed new specifications and methods of test.

The formation of three district committees covering the Southern California, Northern California and Seattle districts, is an important step in the development of the Society's relations with western membership. Already these committees are assisting in the work of developing the technical programs of the Society and are now engaged in considering means whereby Pacific Coast industries may participate more actively and directly in the Society's investigative and standardization activities. Similar committees have been formed in the Chicago and Detroit districts, primarily for the purpose of extending the Society's membership and influence in those districts. As a step in this direction, the Detroit committee is planning a regional meeting in Detroit next March under its auspices—the first of the kind the Society has ever had.

Non-Ferrous Metals

The year has seen considerable prominence given to the subject of non-ferrous metals, not only in the committee work but in the many technical papers that were presented at the 1929 annual meeting dealing with non-ferrous metals subjects. A paper on "Physical Properties and Methods of Test for Some Sheet Non-Ferrous Metals," by J. R. Townsend, W. A. Straw and C. H. Davis, continued the discussion of this subject introduced two years ago and gives the results of investigations undertaken to secure a simple and reliable test for sheet non-ferrous metals and the development of commercial test limits. Commercial hardness limits have been developed based on Rockwell hardness - tensile strength relations. Fatigue studies of the same non-ferrous alloys considered in this paper were presented in a separate paper with J. R. Townsend and Charles H. Greenall as authors. Fatigue resistance of aluminum alloys was discussed by J. B. Johnson and T. T. Oberg. The effect of corrosion accompanied by stress on the properties of sheet duralumin was discussed by H. S. Rawdon. The general subject of corrosion-fatigue of non-ferrous metals was also presented in a paper by D. J. McAdam, Jr., entitled "Corrosion of Metals Under Cyclic Stress." Hardness relations and X-ray studies of non-ferrous metals also received attention.

The investigation on die-cast metals conducted by Sub-Committee XV of Committee B-2 on Non-Ferrous Metals and Alloys is an outstanding piece of work. This investigation involves the making of tests on 50,000 specimens including 12 compositions of both zinc-base and aluminum-base alloys made by various producers and tested by a number of cooperating laboratories. Interesting reports on microscopic analysis and radiographic examination of the aluminum-base alloys were included with the annual report of the committee and similar studies are now being made of the zinc-base alloys. The committee also sponsored a very interesting paper at the annual meeting on "Aluminum Alloys for Pressure Die Castings," with Mr. Sam Tour as author.

As mentioned earlier, Committee B-2 was reorganized during the year through the transfer of three sub-committees to form new standing Committees B-5 on Copper and Copper Alloys, Cast and Wrought, and B-7 on Light Metals and Alloys, Cast and Wrought. One of the remaining sub-committees, namely, Sub-Committee VII on Methods of Chemical Analysis, is cooperating with Sub-Committee XV in the development of standard methods of analysis of zinc-base alloys and with Sub-Committee XIV on Precious Metals and Alloys in the development of standard methods of analysis for silver solders. The scope of the latter sub-committee has been enlarged so as to give consideration to other materials classed as precious metals rather than having such consideration limited to silver and gold solders as heretofore.

Committee B-5 on Copper and Copper Alloys, Cast and Wrought, one of the committees resulting from the reorganization, confined its attention primarily during the past year to the advancement to standard of a number of revisions of existing standards including the following: Standard Specifications for Cartridge Brass, for Cartridge Brass Disks, for Seamless Admiralty Condenser Tubes and Ferrule Stock, for Free-Cutting Brass Rod for Use in Screw Machines, and for Naval Brass Rods for Structural Purposes.

Committee B-7 on Light Metals and Alloys, Cast and Wrought, the other new standing committee, recommended that the Specifications for Aluminum Ingots for Remelting, and for Aluminum Sheet be advanced to standard. It found that the specifications for aluminum-base alloys contained several analyses which have become obsolete. Therefore, it was considered advisable to revise the specifications from the ground up and a new list of aluminum-base alloys for sand castings has been prepared and circulated in the committee. This list includes not only the foundry alloys in more common use, but also the alloys which are heat treated to develop high physical properties. The committee has more recently developed new tentative specifications for aluminum-manganese alloy sheet and aluminum-alloy sheet (duralumin) which it is expected will be submitted to the Society in the near future.

Committee B-3 on Corrosion of Non-Ferrous Metals and Alloys has continued, with slight modifications, to follow its program of long-time service tests in the atmosphere and in liquids, outlined two years ago. The outdoor test racks

have been installed, and it is expected that the test specimens, which are now being machined and otherwise made ready, will be in position next spring.

Committee B-4 on Electrical-Heating, Electrical-Resistance and Electric-Furnace Alloys developed a new accelerated life test for metallic materials for electrical heating which was accepted for publication as tentative at the last annual meeting. The procedure adopted resulted from a very exhaustive investigation which included a number of alternative test procedures with various modifications. These tests leading up to the procedure adopted were described in a paper presented by F. E. Bash and J. W. Harsch on "Life Tests on Metallic Resistor Materials for Electrical Heating."

A standard that will prove of inestimable value to all those interested in the study of non-ferrous metals was developed by Committee E-4 on Metallography consisting of a set of ten standard micrographs showing grain sizes of 0.010, 0.015, 0.025, 0.035, 0.045, 0.065, 0.090, 0.120, 0.150 and 0.200-mm. grain diameters. The set of micrographs was very carefully prepared by first securing a set of specimens approximating as closely as possible the desired diameter and making careful grain counts on these specimens. The set of micrographs has been published on a single insert plate on glazed paper.

Iron and Steel

Renewed interest has been evident in recent years in cast iron. This interest resulted in the holding of a Symposium on Physical Properties of Cast Iron at the 1929 annual meeting. Eleven papers were contributed setting forth the classification of gray-iron alloys, effect of section and composition, correlation of cast-iron test bars and castings, static strength, elastic properties, fatigue properties, impact and wear tests, machineability, corrosion, and heat treatment. The symposium was sponsored by Committee A-3 on Cast Iron. The annual report of the committee included additional data on the heat treatment of cast iron and on the correlation of test bar and casting. The committee's activities carried out during the past few years in respect to the new arbitration test bar culminated in the adoption as standard of Specifications for the Arbitration Test Bar and Tension Test Specimen for Cast Iron. The several specifications of the Society for cast-iron soil pipe and fittings, for gray-iron castings, and for high-test gray-iron castings were suitably revised to make reference to the new arbitration test bar. For the coming year, Committee A-3 is planning an extensive investigation on impact testing of cast iron. This investigation will be financed by the members of the committee, and it is hoped that from this work it will be possible to develop a standard test for the impact value of cast iron.

The Sectional Committee on Cast Iron Pipe has made progress on the program before it. Tests have been carried out at the University of Illinois on strength of pipe using a method similar to those inaugurated by Prof. A. N. Talbot. Trench loads are being made at Iowa State College which will give definite information on some of the questions on earth loads on which there has been much discussion in the past.

Tests have been made at the Massachusetts Institute of Technology on corrosion in water of cast-iron pipe of various chemical compositions, the specimens having been kept immersed up to a maximum of 300 days. Preliminary conclusions from these tests were mentioned in the paper by Prof. H. O. Forrest in connection with the symposium referred to above. The major consideration in nearly every case from the water works standpoint is prevention of tuberculation and consequent reduction of carrying capacity, and for this purpose coatings without pinholes are essential.

The activities of Committee A-1 on Steel during 1929 have been in broadening, correcting and clarifying existing specifications; outlining programs for the development of new specifications; and, in two instances, providing new tentative specifications.

Sub-Committee I on Steel Rails and Accessories has taken steps toward the creation of a joint committee with the American Railway Engineering Association for the drafting of new specifications covering a product known to the trade as intermediate manganese rails.

Sub-Committee II on Structural Steel for Bridges, Buildings and Rolling Stock has continued its study of increasing the tensile requirements for the structural steel grade and the consideration of the restriction of use of bessemer steel on this grade, and has obtained as a basis for consideration the reactions of organizations interested in all phases of the subject.

Sub-Committee IV on Spring Steel and Steel Springs, with the cooperation of members of the Railway Spring Manufacturers' Technical Committee and the Sub-Committee on Springs of the A.R.A., has progressed towards tentative specifications for specially heat-treated helical springs now offered, the basis being a demand from large consumers' organizations for a working basis in the purchase of this product.

The joint committee of Committees A-1 and C-2 on tests on reinforcing steel has laid out a program of investigation on steel reinforcement bars in which Sub-Committee V through individual membership on the joint committee will consider subjects regarding methods of tests relating to the sub-committee's program.

Sub-Committee VI on Steel Forgings and Billets has brought to a conclusion the results of a mass of investigation regarding the necessary reduction from ingot to bloom, resulting in a revision of existing standards. The pertinent details of this investigation have been presented by Mr. Fry, a member of the sub-committee, in a paper before the Society.

A special sub-sub-committee, of Sub-Committee IX on Steel Tubing and Pipe, to develop ways and means of developing specifications for all classes of pipe and tubing such as fusion and resistance welding, hammer welded, and all classes of fabricated pipe, has been formed.

Sub-Committee XI on Boiler Steel is working in conjunction with the A.S.M.E. Boiler Code Committee in the preparation of specifications for so-called open-hearth pure iron boiler plate.

Sub-Committee XIX on Sheet Steel and Steel Sheets is investigating and will draw up a new specification covering steel sheets for freight cars.

New Specifications for Heat-Treated Carbon Steel Helical Springs have been developed and offered as tentative and the complete revisions of the Standard Specifications for Carbon Steel Forgings for Locomotives have been accepted for publication as new tentative specifications.

Committee A-9 on Ferro-Alloys is actively engaged in the preparation of specifications for ferro-molybdenum. This rounds out its group of ferro-alloy specifications.

The Research Committee on Effect of Arsenic and Tin on Tool Steel presented a very interesting report showing the effects of arsenic and tin in quantities of 0.5 per cent on high-speed steel of usual composition. The results of these investigations showed that arsenic and tin in amounts of 0.50 per cent notedly embrittled the steel. The committee will continue the investigation relative to the detrimental effect of small amounts of arsenic and tin in high-speed steel.

Committee A-4 on Heat Treatment of Iron and Steel is considering changes in several of the definitions of heat treatment operation terms.

Committee A-2 on Wrought Iron has completed physical tests and chemical analyses on a series of staybolt irons made by two manufacturers. In manufacturing the specimens the phosphorus only was varied, the other elements such as carbon, manganese, sulfur and silicon being as nearly as possible normal. The results of these tests will be included in the committee's report for 1930.

(Continued on page 6)

AMERICAN SOCIETY FOR TESTING MATERIALS

BULLETIN

Issued Bi-Monthly

Engineers' Club Building, 1315 Spruce St., Philadelphia, Pa.

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Number 42 January 15, 1930

Our Membership in 1930

Continued healthy growth of our membership is a most important thing. To carry out the aims of the Society to the fullest extent we must reach everyone interested in production, use or testing of materials, and the most effective way to reach them is to have them *all* members of the Society. Study of the properties of materials is extending into new industries year by year, increasing the potential sphere of influence of and membership in the Society. Increased membership means several things, each of importance. It means increasing the financial support of the Society's work, which enables us to accomplish our purposes more fully. It means new interests coming into Society affairs, new activities—new blood for committee work. It means a proportionately wider spreading of knowledge of materials, extending the educational value of A.S.T.M. work. It means a greater use of our standard specifications and tests for materials, to the economic benefit of industry and enhancement of the prestige of the Society.

Is there not one of your acquaintances who should be a member of the Society but who is not informed of its activities and of the advantages of membership? If so will you not mention the work of the Society to him and bring to his attention the enclosed application blank, which contains general information about the Society? The review of the year's work given in this issue of the BULLETIN speaks eloquently of what the Society is doing, and the Secretary-Treasurer will be glad to send a copy of the BULLETIN, together with booklets and other information, upon request of any member. Do not forget that membership may be held either by individuals or companies. Where feasible, company memberships are encouraged not only in the interest of increasing the financial support but because of increased stability of industrial memberships in the Society.

For 1929 there were exactly 400 new members elected. For 1930 we want at least 500 new members. We can get them if the members will keep this subject in mind and as opportunity affords bring new members into our ranks.

So do not put aside the accompanying application blank for membership—make good use of it!

1930 Annual Meeting at Atlantic City

Members will receive with the March issue of the BULLETIN further information concerning arrangements for the 1930 annual meeting to be held at Haddon Hall, Atlantic City, N. J., June 23–27.

The Provisional Program of the meeting will, as in the past, be sent to the members about the end of April. An interesting program is again promised in view of the many offers of papers that have already been received.

Research in Protective Coating Industry

The Society through Committee D-1 on Preservative Coatings for Structural Materials is cooperating in a survey on research in the protective coating industry initiated by the Paint and Varnish Division of the American Chemical Society. It is hoped that this survey will show (1) the magnitude of research efforts in this country, (2) the extent to which there is duplication of effort, and (3) which parts of the field are being intensively cultivated and which are being neglected. The survey should also direct attention to various new fields and suggest topics and individual problems which look promising.

Some problems are doubtless being worked upon by various laboratories which may be confidential and which would not be available for this survey. On the other hand, many problems are of a non-competitive nature and especially fundamental problems are being investigated and these would ultimately be the basis of papers which might be prepared and presented before various technical societies. It is problems of this type that it is sought to develop at the present time.

The survey is being made by a joint committee under the auspices of:

The Paint and Varnish Division of the American Chemical Society
The American Society for Testing Materials
The Federation of Paint and Varnish Protection Clubs
Scientific Section of the Educational Bureau of the American Paint and Varnish Manufacturers' Assn.

The information sought is being secured by means of a questionnaire prepared by the joint committee which will be circularized among all who might be carrying on research or development work of interest to the protective coating industry. The answers to the questions will be carefully studied and it is hoped that the results will justify the publication of a pamphlet outlining all of the problems.

Standards of International Electrotechnical Commission

The work of the International Electrotechnical Commission for the past 20 years has resulted in a number of international electrical standards published in the form of individual reports. Since these may be of interest to a number of members they are listed below. Further information concerning them, together with the price of the individual standards, may be secured upon application to the U. S. National Committee of the International Electrotechnical Commission, 33 W. Thirty-ninth St., New York City.

Letter Symbols for Fundamental Physical and Electrical Quantities.
Specifications for Standard Resistance of Copper.
Rules for Rating of Electrical Machinery.
Graphical Symbols for Supply Systems.
Standard Dimensions of Bayonet Lamp Sockets and Caps.
Standard Voltages, Tables of Preferred Average Voltages of Transmission and Distribution Lines.
Rules for the Rating of Traction Motors.
Testing of Hydraulic Turbines.

Committee E-10 on Standards

In line with its policy to hold meetings at designated intervals to review any new standards which the standing committees wish to have published, Committee E-10 is holding a meeting about February 15. Such review is but one of the functions of the committee, the functions in general being:

1. To promote the standardization work of the Society.

2. To consider matters of general policy concerning standardization activities, including relationship with similar activities of other bodies.

3. To consider the desirability of expansion of standardization work into new fields.

4. To review annually the progress of the Society's standardization work.

5. To pass upon new tentative standards proposed between annual meetings of the Society in accordance with provisions of the Regulations Governing Standing Committees.

6. To act in an advisory capacity to the Executive Committee in standardization activities in general.

The expansion of the standardization work of the Society is deemed to be of especial importance and accordingly the committee proposes to make an annual review of the Society's standardization activities. In order to adequately carry out the functions of the committee it is therefore holding meetings each year in October and February. Any items of interest in the Society's standardization work that require development should be brought to the attention of the committee for consideration at these meetings.

A.S.M.E. Fiftieth Anniversary

The American Society of Mechanical Engineers will celebrate its fiftieth anniversary on April 5, 7, 8 and 9, 1930. The celebration will take place in New York City, the headquarters of the Society, in Hoboken, N. J., its birthplace, and in Washington, D. C., a place fittingly in accord with the national and international character of the convocation. The world's leading scientific and engineering societies and educational institutions have been invited to send two delegates each to the celebration. The Society's representatives will be Mr. T. D. Lynch, President of the Society, and Mr. A. A. Stevenson, Past-President and Honorary Member.

The celebration will review the past fifty years of engineering achievements, bringing together the world's outstanding men in engineering. A series of sixteen papers will be presented, each summarizing and evaluating the contributions of engineering to the cultural, social, economic and political life and also visualizing the future of the engineer's place in the promotion of the common welfare in one of the sixteen selected geographical divisions of the world.

The events of the celebration in New York City will take place at the United Engineering Societies Building in the morning of April 5, and at Stevens Institute in Hoboken, in the afternoon. The papers will be presented in the U. S. Chamber of Commerce Building in the National Council Chamber on April 7 and 8. Members of the Society are cordially invited. Washington Headquarters will be at the Mayflower Hotel.

Address Wanted

Persons who know the present address of the member whose name and last-known address is given below are asked to advise the Secretary-Treasurer:

STEWART, B. A., Vice-President and Engineer, Servicised Products Corp., Room 314, 53 W. Jackson Boulevard, Chicago, Ill.

Schedule of Committee Meeting

DATE	COMMITTEE	PLACE
January 15–17	A-1 on Steel	Philadelphia
January 21	Executive Committee	Philadelphia
January 22	D-16 on Slate	New York City
January 30–31	D-2 on Petroleum Products and Lubricants	Baltimore, Md.
February	B-3 on Corrosion on Non-Ferrous Alloys	New York City
February	E-6 on Papers and Publications	Philadelphia
February	E-10 on Standards	Philadelphia
March 13–14	D-13 on Textile Materials	Charlotte, N. C.
March 18–21	GROUP COMMITTEE MEETING.	Detroit
April 8	Executive Committee	Philadelphia
April	D-1 on Preservative Coatings for Structural Materials	Atlanta, Ga.

Spring Group Committee Meeting in Detroit

As previously announced, the annual Spring Group Committee Meeting will be held in Detroit at the Book-Cadillac Hotel over the dates March 18 to 21. A large attendance is expected, particularly in view of the fact that the Group Meeting is being held in conjunction with the Regional Meeting in Detroit. Many of the standing committees have already indicated their intention to participate and arrangements are now being made for the accommodation of these committees and for the preparation of the detailed schedule.

Arrangements are again being made with the railroads to secure special convention rates on the certificate plan.

Regional Meeting in Detroit

Wednesday, March 19, 1930, is the date set for the Regional Meeting in Detroit to be held at the Book-Cadillac Hotel in conjunction with the Spring Group Committee Meeting. The technical program for this meeting was announced in the December issue of the BULLETIN. All members of the Society are invited to attend and further announcements concerning the meeting will be included in a Circular to Members to be sent out about the middle of February.

Coal and Coke Methods Approved by A.S.A.

Announcement is made of the approval as American Standard by the American Standards Association of the Standard Methods of Laboratory Sampling and Analysis of Coal and Coke (D 271 – 29) as revised at the recent annual meeting of the Society.

Offers of Papers for 1930 Annual Meeting

Members are reminded of the invitation to submit offers of technical papers for presentation at the 1930 annual meeting. This invitation was extended to the members in a circular sent out December 2. All offers accompanied by a summary and received not later than February 24 will be considered by the Committee on Papers and Publications, but consideration of offers received after that date is entirely contingent upon the condition of the Provisional Program when the offer is received.

Committee E-6 on Papers and Publications will hold a meeting shortly after the date mentioned at which the program for the meeting will be developed. Any suggestions in respect to the program should be at hand before that date in order to receive the attention of the committee.

The A.S.T.M. in 1929

(*Continued from page 3*)

The committee has cooperated with the Sectional Committee on Standardization of Wrought Iron and Wrought Steel Pipe and Tubing in the preparation of specifications for hammer-welded pipe, resistance and fusion-welded pipe, riveted pipe, lock-bar pipe and others.

Its Sub-Committee on Nomenclature has been instructed to prepare a definition for wrought iron without including in the definition any reference to the process by which the iron is to be made. When a satisfactory definition is adopted, the various specifications for wrought-iron products will be revised by the elimination of process clauses and the incorporation of quality standards which can be measured by definite tests.

The committee made minor revisions in its specifications for welded wrought-iron pipe, for staybolt and engine-bolt iron, and for hollow rolled staybolt iron.

During the past year the Joint Research Committee on Effect of Temperature on the Properties of Metals has found it necessary to reorganize in order to secure a better representation of the industries most directly interested in its fields of activity. While this has acted to retard somewhat the assembly and publication of data obtained by the cooperating laboratories and the allocation of new work, progress has continued in work previously assigned to various laboratories. By its nature, however, the accumulation of test data is necessarily slow.

The three most active lines have been the accumulation of further tension test data, which it is hoped will eventually permit the preparation of a test code for high-temperature tension tests, the continuation of creep tests on carbon, low-alloy and high-alloy steels, as well as on nickel, and the start of high-temperature endurance tests through cooperative arrangements with the University of Illinois.

The atmosphere exposure tests of copper-bearing and non-copper-bearing sheets at Annapolis under the jurisdiction of Committee A-5 on Corrosion of Iron and Steel are still in progress, the rate of corrosion continuing, all of the failures up to the present time being in the non-copper-bearing light gage sheets. The galvanized sheets, hardware, fastenings and structural shapes exposed to the atmosphere at Pittsburgh, Altoona, State College, Sandy Hook and Key West have been inspected at regular intervals and interesting data reported. A special group has been organized in cooperation with the American Electroplaters' Society to study the relative protective values of different chromium coatings of specified thickness, deposited under definite conditions, upon typical base metals, with or without intervening coatings of copper and nickel, and the relation between the results of laboratory or accelerated tests and typical atmospheric exposure.

In addition to the papers relating to corrosion referred to earlier, two papers presented at the annual meeting discussed the possibility of applying statistical analysis methods to corrosion data. Another paper described a method of making copper replicas of corroded metal objects. F. N. Speller, I. B. McCorkle and P. F. Mumma presented a paper on "The Influence of Corrosion Accelerators and Inhibitors on Fatigue of Ferrous Metals."

A list of terms, definitions and symbols relating to magnetic testing prepared by Committee A-6 on Magnetic Properties was accepted by the Society for publication as tentative. Methods for testing at very low inductions with alternating currents of power frequency are being studied with a view to the formulation of a standard method. For the testing of magnet steels of the cobalt type, it is necessary to employ magnetizing forces of much greater intensity than for other magnetic materials. A sub-committee is studying the methods available for this type of testing. The problem seems to be somewhat complicated but its importance warrants considerable study. It is hoped that specifications for this type of test can be worked out before long.

Cement, Lime and Gypsum

Committee C-1 on Cement has had before it during the year the revision of the present standard specifications for portland cement and the development of requirements for high-early-strength cement. This has resulted in the proposal to increase the present strength requirements of the regular standard portland cement and in the preparation of new tentative specifications for high-early-strength portland cement which differ from that for standard portland cement only in requiring a higher early strength and at earlier ages and permitting a greater amount of sulfuric anhydride. It is expected that a report will shortly be issued setting forth the proposed revisions and the proposed new specifications.

The committee has been continuing its studies of new methods of testing portland cement covering particularly the question of the use of wetter mixtures and also the preparation of specifications covering plastic cements. In this connection a paper was presented at the annual meeting by O. L. Moore describing a new compression test for portland cement.

The Cement Reference Laboratory established by the American Society for Testing Materials through Committee C-1, at the Bureau of Standards, started active work about June. There are now five on the staff of this Reference Laboratory, two of whom spend the greater part of their time in the field inspecting the equipment used by the various cement testing laboratories and offering instruction in methods of testing cement according to the standards of the Society. By the first of January, 1930, there will have been visited and inspected 54 laboratories, and approximately 3000 pieces of apparatus examined to see whether they conform to the requirements of the Society.

The committee has appreciated that some of the tolerances on testing apparatus and test methods as now given in the specifications for portland cement should be set forth more explicitly and accordingly new tolerances have been determined. These will be submitted as a revision of the specifications at the next annual meeting.

A fundamental paper on the rate of hydration of cement clinker by F. O. Anderegg and D. S. Hubbell was presented at the last annual meeting. Also a discussion by H. J. Gilkey on the tensile autogenous healing of portland-cement mixtures, the cements included in this investigation being those reported upon by Committee C-1 last year.

A subject of interest to this committee, but of more especial interest to Committees C-7 on Lime and C-11 on Gypsum, is the organization under the procedure of the American Standards Association of a sectional committee to draw up plastering specifications covering all materials which would be national in their field of application. This sectional committee is now being organized under the joint sponsorship of the American Institute of Architects and the A.S.T.M. It is composed of representatives of all the interested groups such as producers, consumers, producers of materials to which plastering is applied, those responsible for the execution of the work and groups representing financial institutions. It is expected that the initial organization meeting will be held in the near future.

Another important feature now before Committee C-7 is the general reorganization of existing sub-committees, with the special view of initiating a study of new material to be presented on finishing lime, together with a study of masonry mortars and definitions relating to the various physical conditions in which lime is marketed.

Committee C-11 on Gypsum is continuing its investigations on the effect of different types of calcium sulfate retarder on portland cement, much of the work being carried on at the Bureau of Mines New Brunswick Station. Dr. P. S. Roller of the Bureau of Mines has undertaken the

problem from a fundamental point of view, in order to attempt an explanation of the differences in the action of the different forms of $CaSO_4$ and to study the causes which affect them.

It is proposed to submit revised specifications covering the methods of testing gypsum wall board as well as gypsum plaster board at the next annual meeting of the Society.

The present method for determining normal consistency of calcined gypsum is by means of the Southard viscosimeter. This instrument, owing to the length of time required to determine normal consistency, is impractical and as a result has been discarded by the industry. It is necessary that some quick, accurate method for the determination of this property be standardized—therefore, tests were conducted by the Bureau of Standards to determine the merits of several different types of apparatus used for this purpose with the result that Committee C-11 has adopted the modified Vicat apparatus in lieu of the Southard viscosimeter.

There is a vital need for a standard method of determining the sand content of set gypsum plaster. The question as to whether or not a plaster has been over-sanded and the methods of determination of the sand content of a sample of set-up plaster have not been standardized. Committee C-11 is investigating a proposed method and hopes to submit it as a tentative standard at the next annual meeting of the Society.

Proposed new tentative specifications for gypsum sheathing board have been prepared which will be submitted to the Society at the next annual meeting.

During the past year several changes were made in the tentative specifications for Keene's cement, for calcined gypsum for use in the preparation of dental plasters, and definitions of terms relating to the gypsum industry. The former tentative specifications for gypsum molding plaster and for gypsum pottery plaster were advanced to standard with slight modification.

Concrete and Concrete Aggregates

Committee C-9 on Concrete and Concrete Aggregates, appreciating that it has a very extensive field before it and many problems to develop, has created an organization whereby a number of small sections are formed and specific problems assigned to individual members of these sections. This resulted in a number of interesting reports being presented in connection with the annual report of the committee, such as "A Digest of Report on Effect of Stone Dust on the Properties of Concrete," by A. T. Goldbeck, "A Study of the Effect of the Method of Fabrication on the Strength and Uniformity of Flexure Test Specimens of Concrete," by L. W. Teller, "Effect of Flat Particles on Concrete-Making Properties of Gravel," by Stanton Walker and C. E. Proudley, and "Effect of Coal and Lignite in Sand for Concrete," by P. J. Freeman.

Further reports of sub-committees have since been received. Sub-Committee III on Unification of Specifications has prepared tentative specifications on the projects listed below and has submitted them to the sub-committee under whose jurisdiction they fall: (1) Quality of concrete and materials for concrete, (2) Proportioning of concrete, (3) Depositing concrete, and (4) Curing concrete. Work has also been done in preparing an outline of a general specification for concrete.

Sub-Committee VII on Strength Tests of Concrete has developed a method of capping concrete specimens using a sulfur compound, a proposed tentative standard laboratory method of making transverse tests of concrete using a simple beam with center loading, a method of fabricating transverse test specimens, and a method of measuring cores drilled from a concrete structure.

A new Sub-Committee VIII on Permeability Tests of Concrete has recently been organized.

Sub-Committee IX on Specifications and Methods of Tests of Aggregates reported on abrasion of aggregates, tests to ascertain the amount of soft or rotten particles in aggregates, soundness of aggregates, outline of method for making tests of fine and coarse aggregates, and effect of stone dust in concrete, and a study of methods for determining moisture content in concrete aggregates.

Sub-Committee X on Extraneous Substances in Concrete has work actively under way on studies of effect of shale, clay and silt in aggregates, effect of mica in sands, effect of limestone dust, effect of organic impurities, and effect of oil-bearing aggregates.

Sub-Committee XI on Apparatus for Testing is giving consideration to recommending an increase in the temperature of storage rooms and moist closets for curing concrete from 70° F. ± 5° F. to 75° F. ± 5° F.

Sub-Committee XII on Measurement of Materials, Mixing and Placing Concrete has a number of projects assigned to it. So far, particular attention has been given to the development of a bibliography, the review of articles in it, and to the development of a test for measuring the segregation of concrete.

Concrete is also of interest to Committee D-4 on Road and Paving Materials and this committee has prepared specifications for portland cement concrete for pavements and for pavement bases which it proposes to issue in the near future.

An interesting paper was presented at the annual meeting by R. E. Davis and G. E. Troxell on the modulus of elasticity and Poisson's ratio for concrete. A paper by N. H. Roy indicated a bacteriological method of determining sugar in sand. D. A. Abrams discussed powdered admixtures in concrete. The general subject of admixtures in concrete is a live one and Committee C-9 is giving intensive study to the subject.

In order to collate the information extant on the properties of mineral aggregates and to develop those phases requiring further research, a symposium was held in connection with which eleven authors contributed papers on methods of inspection, on fine aggregates in concrete, in mortar and in plaster and in bituminous mixtures, and on effect of aggregates on stability of bituminous mixtures, influence of quality of coarse aggregate on strength and on durability of concrete, on fire resistance, on aggregates for low-cost untreated roads, on aggregates for sewage disposal and railroad ballast, and a summary paper emphasizing the needed research in mineral aggregates.

Committee C-4 on Clay and Cement-Concrete Pipe is working on a revision of its specifications for clay pipe and cement-concrete pipe. The purpose of the committee is to strengthen the specifications in various points that have been found in practice to be either obscure or uncertain, and make them conform as far as possible to the present needs of engineers and the advancing methods of manufacture.

Hollow Tile, Brick and Refractories

Committee C-8 on Refractories has had a growing presentiment that the desired effectiveness in the use of refractory tests in the control of manufacture, inspection and utilization of refractories would not be attained until all test procedures and methods of reporting data had been put upon a sound statistical basis. The Precision and Tolerances Section of Committee C-8 accordingly undertook this past year the preparation of a Refractory Test Manual. The procedures given in the manual have been based, in so far as possible, on well-established, modern statistical theory and the symbols and definitions are those which are being adopted quite generally in work of this kind. The manual is written to meet the immediate needs of refractory engineers and other technologists in this field, with the understanding that from time to time it would be revised to keep pace with advances in theory and practice.

The Section on Temperature has under way an investigation, with nine prominent laboratories cooperating, with the object of eventually selecting a standard furnace for performing P.C.E. tests. Eleven refractory materials are being tested. In the committee's present test method, the prepara-

tion and mounting of the cones, the rate of heating, and the furnace atmosphere have been defined. The section plans also to submit a standard cone-temperature conversion table to be used in connection with the P.C.E. test.

The effect and relation of cold crushing on edge, flat and on end has been studied in detail at the Ohio State University Engineering Experiment Station for refractories made by three common methods: hand-made, stiff-mud, and dry-press. Data of this type for building and other brick have been existent in the literature but it was felt that these data were not necessarily applicable to refractories because of differences in the manner of manufacture and burning. This work was performed to supply data to be used in making recommendations for a standard cold crushing test.

The committee is working with the U. S. Bureau of Standards in the preparation of two standard samples; a raw plastic clay and a raw flint clay. Ten industrial and private laboratories interested in the analysis of refractory materials will analyze the materials.

The work of the Section on Heat Transmission has progressed to the point where the following definitions: (1) thermal conductivity, (2) thermal resistivity, (3) resistance, (4) conductance, (5) film resistance, (6) surface coefficient, (7) total resistance, (8) transmittance, (9) transmission, and (10) overall coefficient of heat transfer, will probably be submitted shortly for recommendation as standards, following closely those of the National Research Council. The section plans later to submit a standard test code covering a testing method to determine heat transmission at temperatures over 1000° C. conforming as nearly as possible to National Research Council standards.

A test for determining the resistance of refractories to abrasion at elevated temperatures is being continued at Penn State College.

Committee C-3 on Brick during 1929 recommended for advancement to standard its tentative specifications for building brick, made from clay and shale. An extensive revision of its tentative specifications for paving brick was made. The paper "Water Absorption and Penetrability of Brick," by J. W. McBurney, presented at the 1929 annual meeting, represents work done for the purpose of determining the utility of water absorption measurements.

In the past Committee C-10 on Hollow Masonry Building Units has confined its activities to the development of specifications and methods of test for hollow tile, a burned-clay building unit. Plans are now being made, however, to begin work on the preparation of specifications for hollow building units of concrete. Twelve new members have been elected. A sub-committee will be formed to gather the essential data and prepare specifications and methods of test for hollow concrete building units.

The committee has continued discussions of the tentative revisions of the present specifications for hollow tile. New data have been presented on methods of making compression tests with particular reference to the effects of different capping materials on the results of tests. A new committee has been appointed to cooperate with other committees of the Society in a broad study of the relation between the sizes of building units and of window, door and other openings in masonry walls.

Paints, Oils and Naval Stores

Committee D-1 on Preservative Coatings has continued with its well diversified program and a number of significant results have been accomplished. The specifications and methods of testing shellac varnishes have been completely rewritten and all of the test procedures have been separated and combined in a more logical way under one title. Much work has been done on cellulose ester coatings and a number of tentative specifications have been put forward for the raw materials used in their preparation.

A tentative method of analysis for the color characteristics of paints in terms of fundamental physical units was proposed and a typical optical setup for color determination was described. A number of revisions were made in methods of analysis or tests under the jurisdiction of the committee and new methods of test for determination of the acetone extract in dry lampblack and dry boneblack and for the determination of polishing lubricant in aluminum powder were proposed.

A paper presented at the annual meeting by G. W. Thompson discussed the True Tinting Strength of Pigments.

Committee D-17 on Naval Stores during the past year conducted another analytical study of the tentative method for the determination of toluol insoluble in rosin, and, on the basis of that and previous work, will recommend to the Society at its next annual meeting that this method be advanced to standard.

The committee also is drafting methods for the complete examination of rosin which it hopes to recommend as tentative at the next annual meeting.

The committee has in mind holding a second rosin symposium, since the advances which have been made in the study of rosin and the expansion of its uses will lead to the presentation of interesting and valuable papers dealing with rosin.

The Effect of Storage on the Properties of Turpentine was discussed at the annual meeting in a paper by W. B. Burnett and H. K. Salzberg.

Committee D-2 on Petroleum Products and Lubricants added to its list of methods of testing petroleum and petroleum products a new tentative method of test for the determination of expressible oil and moisture in paraffin waxes. Important changes were made in the tentative method of test for sulfur in naphtha and illuminating oils and in the tentative method of test for precipitation number of lubricating oils and minor tentative revisions in four standard methods were approved. These methods are: test for distillation of gasoline, naphtha, kerosine and similar petroleum products, test for viscosity of petroleum products and lubricants, test for water in petroleum products and other bituminous materials, and test for carbon residue of petroleum products.

A new method of procedure has been worked out by the committee in connection with the development of specifications for certain petroleum products through the organization of "technical committees."

Three technical committees are now being organized as follows: on Gasoline, on Motor Oils, and on Fuel Oils. The Technical Committee on Fuel Oils is being organized as a sectional committee under the procedure of the American Standards Association for the purpose of preparing specifications for Diesel and other fuel oils. A paper dealing with the effect of the mixing temperature on the physical properties of an oil asphalt in a sheet asphalt mixture was presented at the annual meeting by J. H. Bateman and H. L. Lehmann.

Waterproofing Materials

Committee D-8 on Bituminous Waterproofing and Roofing Materials has, during the past year, presented and had accepted the following specifications and methods of test: Specifications for Asphalt for Use in Constructing Built-Up Roof Coverings; Methods of Analysis of Roofing Felt for Fiber Composition; and Method of Test for Coarse Particles in Bituminous Materials by Elutriation.

Slight revisions are being considered in the specifications for roofing materials and the investigations of tests for ductility are being continued.

Committee D-9 on Electrical Insulating Materials has revised its standard methods of testing molded insulating materials and its standard methods of testing electrical insulating oils. Many of the tentative methods under the jurisdiction of the committee were also revised, rounding out these methods preparatory to their final adoption.

The sub-committees have been quite active during the year. Studies are being made to work out a suitable method for measuring the dielectric strength of insulating varnishes

at elevated temperatures. Methods of measuring the hardness of varnish films and of oil resistance to film hardness are being studied.

Considerable progress has been made during the past year in connection with the methods of testing for the plasticity of phenol plastic molding compounds. Studies to determine the effect of impact fatigue have been under way for some time and will doubtless be pushed more actively during the coming year. It is hoped that these studies will lead to definite information as to the effect of repeated impact upon the actual energy to break a given specimen. During the past year preliminary studies have been started to draw up purchase specifications for resoid plastic molding compounds and resoid plastic molded products.

Preliminary work has been started in drawing up purchase specifications for phenol fiber sheets and hard sheet fiber.

The section working on the dielectric strength of materials has been developing a method of test at high temperatures.

While the work on liquid insulation during the past year has led to only one recommendation relative to the method of sampling oil, there has been considerable work done along various lines. At the present time the work is divided into groups working on the following subjects: (1) Neutralization Value, (2) Life Tests, (3) Short-Time Sludge Tests, (4) Tests for Circuit Breaker Oils, (5) Sampling Oil from Apparatus in Service, (6) Correlation with the Work on Insulating Oils of the International Electrotechnical Commission.

The work of developing suitable electrometric methods for measuring neutralization number of insulating oils has been progressing steadily during the year and several alternate methods are being prepared on which to conduct a series of comparative tests by five or six cooperative laboratories.

The committee has been reviewing the possibilities of using various types of accelerated sludge tests. The committee is actively engaged in studying tests for resistance to emulsification of circuit breaker oils, retention of water, formation of gases under arcing temperature, and rate of settling out of carbon.

The Sub-Committee on Radio Frequency Tests has been giving thought to measurements of power factor and dielectric constant at short wave lengths, such as from 15 to 30 meters, and several laboratories have been working on the problem. The work of writing a method involving an electrical endurance test at high frequencies is being carried on.

The Sub-Committee on Resistance and Power Factor Measurements has been actively engaged in obtaining data leading to the development of methods for measuring power factor and dielectric constant of liquids and solids at ordinary frequencies.

Coal and Coke

Committee D-5 on Coal and Coke submitted two new tentative methods, namely, a method of test for size of anthracite, and a method of test for sieve analysis of coal. The method of test for size of anthracite covers screen tests of anthracite coal to determine the percentage of undersize or oversize in any given commercial size. The method of test for sieve analysis of crushed bituminous coal is intended for the rather coarsely crushed coal, less than 1½ in. in size, such as is charged into coke ovens. Four tentative standards were advanced to standard. The tentative revisions of the standard methods of sampling and analysis of coal were advanced to standard. These revisions make the determination of sulfur in coal and coke by the bomb-washing and sodium peroxide fusion methods alternate methods with the Eschka method.

A new sub-committee on coke sampling was formed to prepare methods of collecting coke samples for analysis. These methods are to supplement the present standard method for sampling coal. The sub-committee also has jurisdiction over methods of sampling for the testing of physical properties of coke.

The Sub-Committee on Foundry Coke Specifications prepared a specification giving tolerances based on chemical composition. This form was submitted for criticisms to a large number of consumers and producers of foundry coke. Many valuable suggestions were submitted by the consumers and producers.

The Sectional Committee on Classification of Coal, organized in 1927, has actively pursued its work during the past year. Of the three technical committees, the one on Scientific Classification of Coal has taken the lead because much of their information is needed as a basis for the possible development of use classification. The Marketing Practice Committee has prepared a comprehensive report with reference to the coals of the south. The tentative accelerated test for slacking properties of coal has been applied to a number of different coals at the Pittsburgh Experiment Station of the Bureau of Mines, at the Fuel Testing Laboratories of the Department of Mines of Canada, at Ottawa, and at the laboratories of the Scientific and Industrial Research Council of Alberta, at Edmonton, Alberta. The same laboratories are also determining hardness and friability of typical coals in order to obtain data on physical properties that may be of importance in coal classification. Data have been assembled on various methods of correcting ash back to the original mineral matter of the coal and on the extraction of ash by acid treatment. The Sub-Committee on Methods for Scientific Classification has prepared charts showing the correlation of various existing methods for classifying coal. A general review of the accomplishments to date is being prepared for publication and a series of papers will be presented at the February meeting of the American Institute of Mining and Metallurgical Engineers in New York, covering the experimental and investigative work conducted by the various sub-committees. The correlation of different existing systems of classification will mark the first important accomplishment of the committee.

Timber and Shipping Containers

Committee D-7 on Timber during 1929 continued the study on the application of the standard rules for structural timbers. The specifications are being revised and enlarged for the purpose of making the specifications more complete and clearer. The strength of clear wood has been added as a factor of strength and green wood has been used as the basis of working stresses.

The committee also submitted tables of factors for use in correcting the volume of creosote oil. The definitions of terms relating to structural timber have also been clarified and expanded in order to include definitions of all types of defects.

Considerable progress has been made in investigations on moisture content of timber and three methods of test have been developed for the determination of moisture, which methods are not receiving study to determine their general applicability.

The subject of fire resistance treatment of timber has received further consideration in the development of a test at the Forest Products Laboratory for measuring the fire resistance of wood which was described in a paper presented at the annual meeting by T. R. Truax and C. A. Harrison.

Committee D-10 on Shipping Containers is extending its work in order to include other types of containers than those considered in the past. It is accordingly proposed to organize committees to cover wood containers, fiber containers, paper containers, woven containers, metal containers and metal reinforcements. It is expected that the work of the committee will continue to be of a general and fundamental nature with considerable emphasis on the development of a nomenclature with definitions of terms used by shippers and the container industry, methods of test, standards of quality of materials, and methods of measuring timber.

Of outstanding interest was a paper presented at the annual meeting by Oliver Bowles on "Fundamental Factors in the Testing of Mineral Products with Special Reference to Slate and Related Materials." This paper emphasizes the

distinction between the group of products made from raw materials requiring smelting or other treatment and that group composed of those that retain their natural structure and properties in the finished product. In the second group no modifications are possible and adaptation for use must be accomplished by selection only. Slate and building stone, of course, fall under this latter class.

Committee D-16 on Slate has continued its investigations on the properties of slate including the development of suitable methods of test with particular reference to standardization of samples. Particular attention during the past year was given to the absorption test. The new Sub-Committe on Utilization and Performance is collaborating with the Bureau of Standards in devoloping data on roofing slate and its utilization for the Federal Specifications Board Committee which is preparing specifications for slate for roofing purposes.

Committee D-18 on Natural Building Stones is at work on the development of uniform nomenclature applying to the stone industry, methods of physical tests for stone, uniform names and descriptions of stone surface finishes and uniform methods of cubing stone. As a result of a comprehensive series of research studies on the effectiveness and relative merits of various elastic caulking compounds on stone work Mr. H. H. Dutton, a member of the committee, presented a paper entitled "Tests of Elastic Caulking Compounds."

Of interest not only to the slate and building stone industries, but also to the brick and allied industries, is the general subject of weathering characteristics. In order to coordinate the studies of this important subject a joint committee has functioned during the year composed of the representatives of Committees C-3 on Brick, C-9 on Concrete and Concrete Aggregates, C-10 on Hollow Tile, D-16 on Slate, and D-18 on Natural Building Stones.

Rubber and Textiles

Committee D-13 on Textile Materials has been quite active during the past year. Tentative Specifications for Tire Chafer Fabrics and for Asbestos Tape for Electrical Purposes have been adopted. The committee now has fifteen standard and nine tentative specifications. Active work is in progress on specifications for belting duck, electrical tapes, enameling duck, and napped sheeting.

A large amount of investigative work is being carried on. Work of a fundamental nature is being carried on in experiment stations and the office of Cotton Marketing Investigation in the Department of Agriculture which will have an important bearing on our specifications for raw cotton. The question of moisture regain is receiving intensive study. The percentages for wool and rayon are being carefully checked. The committee particularly solicits data from member or non-member organizations which will assist it in arriving at the correct figures. The regain in cotton fabrics, yarns and bale cotton is also being studied. Likewise a standard method of measuring is receiving consideration. Other important matters under investigation are: identification of rayons, method of analysis of cotton-wool mixtures, gage, tear and abrasive resistance, and the effect of humidity on stretch.

Certain revisions in test methods for tire cord have been recommended by a special committee. These are being studied with a view to incorporating them in our specifications.

Committee D-13 has undergone a complete reorganization. There are now two groups of sub-committees. A sub-committee in Group "A" deals with a single fiber (or group of related fibers) and its fabrications. A sub-committee in Group "B" deals with matters relating to more than one fiber as methods of test, machines, finishing, etc. The Group "B" committees also act in a reviewing or correlating capacity on matters originating in the "A" group. It is believed that the grouping of sections interested in related matters under one sub-division will facilitate the work of the committee and prevent duplication of effort.

Committee D-11 on Rubber Products has a number of projects before it including a program of investigation and standardization of test methods for steam hose in connection with which it is proposed to consider new tests which will provide better measures of service performances; the preparation of standard methods for testing power transmission belting and the classification of various types of transmission belting; the development of performance specifications for rubber insulation; a study of life tests for rubber products and the development of abrasion tests for rubber products. The latter subject has received considerable attention during the past two years resulting in the presentation of a paper at the annual meeting both in 1928 and 1929. A paper at the latter meeting was presented by H. A. Depew and E. G. Snyder on "The Use of a Group of Performance Tests for Evaluating Rubber Compounds That must Withstand Repeated Compression."

The committee is especially interested in the development of rubber products for absorbing vibration which products, of course, are of especial interest to the automotive industry. In this connection the committee submitted a new method of test for hardness of soft rubber (in slab form).

Methods of Testing

Many of the papers presented at the annual meeting deal with various phases of methods of testing; in addition to those already cited mention should be made of the papers by H. J. French and E. M. Staples on "Bearing Bronzes With and Without Zinc," by R. L. Templin on "The Determination and Significance of the Proportional Limit in the Testing of Metals," and by W. A. Slater and G. A. Smith on "Tension, Bend and Impact Tests on Reinforcement Bars." Committee E-1 on Methods of Testing has extended its study of various types of test, and a number of sections and technical committees are being organized including the Sections on Elastic Strength, on Speed of Testing, on Compressive Strength, and on Flexure Testing, and a Technical Committee on Thickness Measurement. A paper by E. C. Bingham on "Some Fundamental Definitions of Rheology," contributed to the work of a technical committee of which he is chairman.

Mention has been made in connection with the subject of corrosion of two papers dealing with the application of statistical methods to analysis of corrosion data. Mention was also made of the preparation by Committee C-8 of a Refractory Test Manual which sets forth some of the principles of the analysis of test data. This subject is receiving increasing attention and bids well to assume considerable importance during the coming year. A round-table conference on analysis and presentation of data was held by the A.S.T.M. in conjunction with the American Society of Mechanical Engineers which resulted in the proposal to organize a joint committee with the American Statistical Society and the American Mathematical Society for the purpose of developing the subject further. Committee E-1 on Methods of Testing has recognized the need of giving study to this subject in the organization of a new technical committee.

Inter-Society and International Relations

International relations have assumed considerable importance during the year. The Society is assisting in the development of the program for the 1930 Congress of the New International Association for Testing Materials in Zurich. It is cooperating in the work of the International Electrotechnical Commission through the U. S. National Committee, principally in the study of electrical insulating oils. For some years it has been cooperating directly with the British Institute of Petroleum Technologists in the development of tests for petroleum products and similar arrangements are being made for cooperative work with the Germans. Definitions of bituminous road materials have been studied in conjunction with the British for presentation to the International Associations of Road Congresses. Contacts with the International Standards Association have been established through the American Standards Association, which has recently become affiliated with the I.S.A.

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PROFESSIONAL CARDS will be accepted for inclusion on this page from Consulting Engineers, Metallurgists, Chemists, Testing Engineers and Testing Laboratories.

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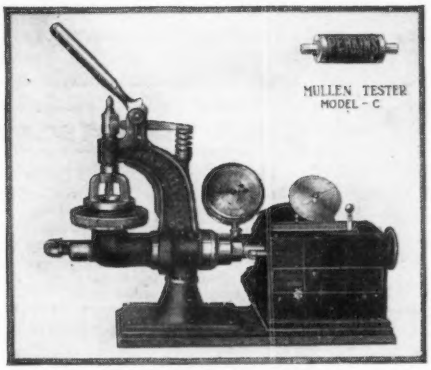

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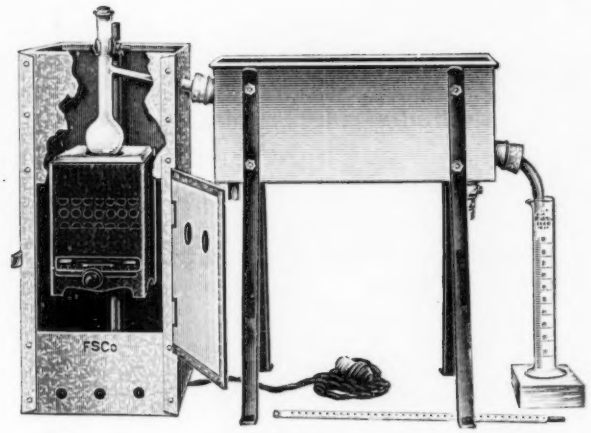

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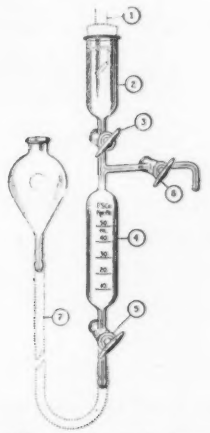

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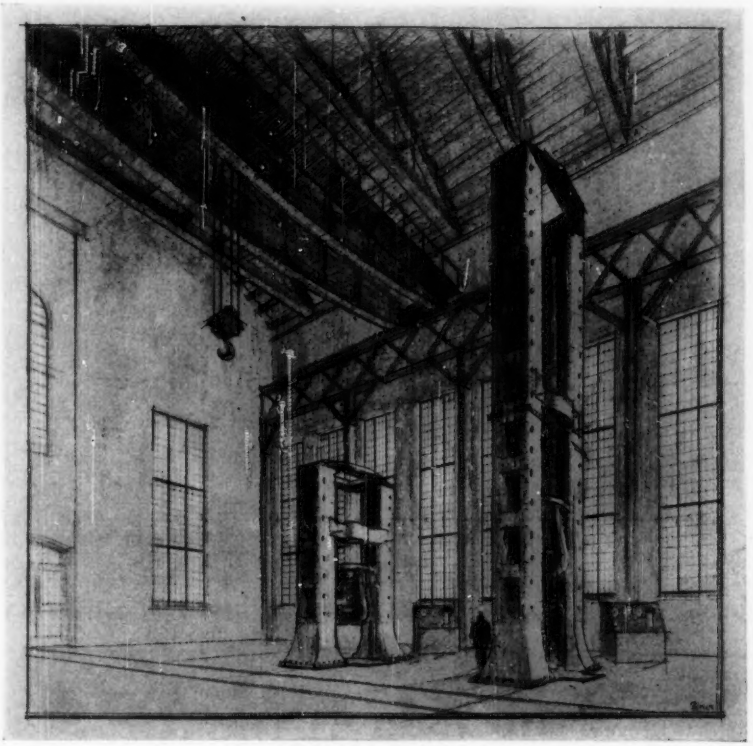

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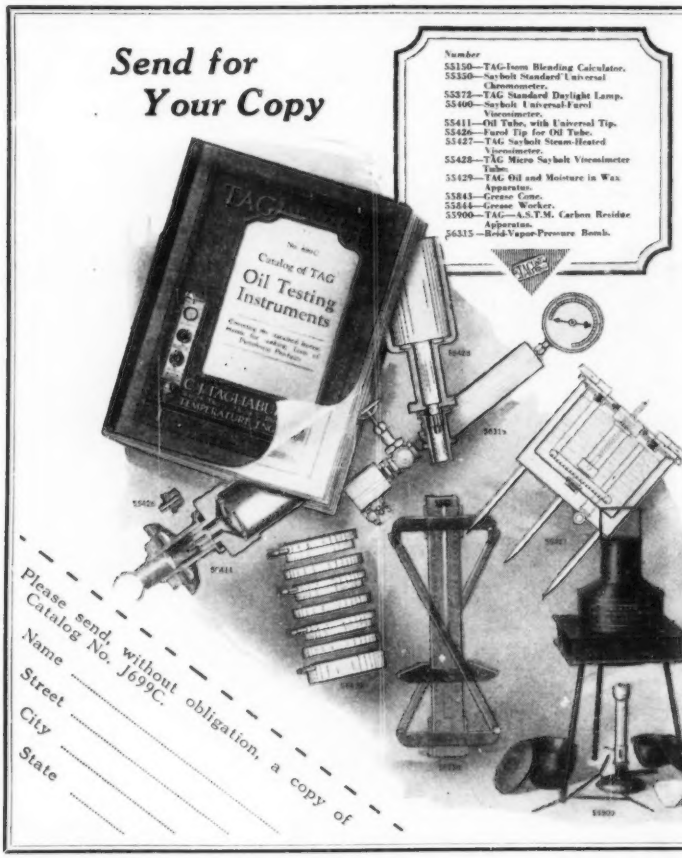

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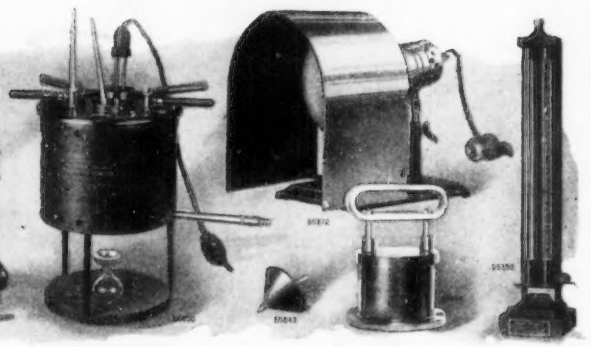

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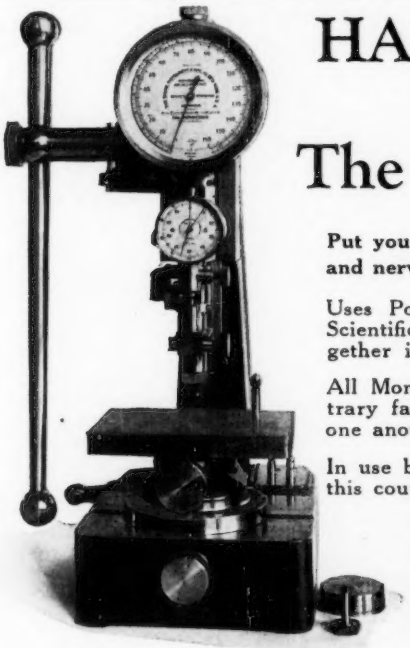

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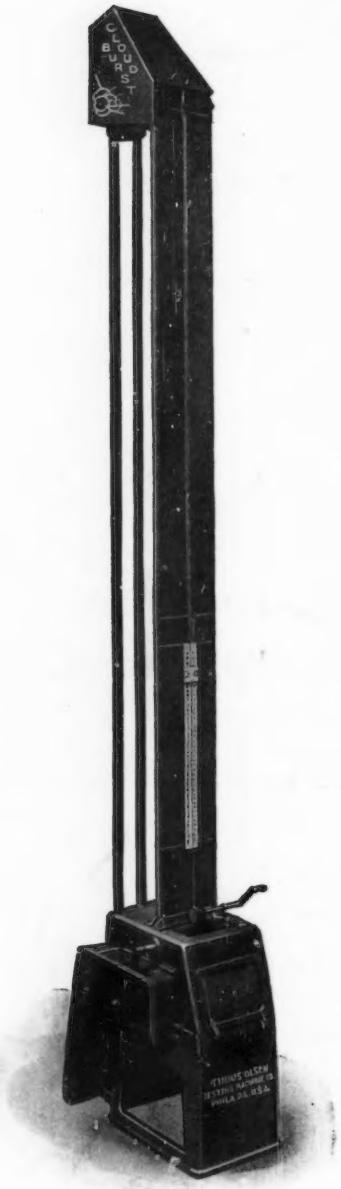

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